

Section 1120

1115-4 MEASUREMENT AND PAYMENT

Flashing Arrow Board will be measured and paid as the maximum number of boards satisfactorily placed and accepted by the Engineer in use at any one time during the life of the project as required by the contract.

Replacement, repair and maintenance of arrow boards will be incidental to the work of this section.

Payment will be made under:

Pay Item	Pay Unit
Flashing Arrow Board	Each

SECTION 1120

PORTABLE CHANGEABLE MESSAGE SIGNS

1120-1 DESCRIPTION

Furnish, install, maintain, relocate and remove portable changeable message signs.

1120-2 MATERIALS

Refer to Division 10.

Item	Section
Portable Changeable Message Signs	1089-7

Use portable changeable message signs that are on the NCDOT Approved Product List.

Poor performance of portable changeable message signs at any site, whether or not related to a specific contract, may be grounds for non-acceptance of a product on any project under contract.

1120-3 CONSTRUCTION METHODS

Mount all portable changeable message signs on a trailer or truck so as to support the message board in a level position and in accordance with the plans. Align and sight the portable changeable message sign to provide optimal driver visibility. Messages on a portable changeable message sign shall consist of no more than 2 phases, and a phase shall consist of no more than 3 lines of text. Each phase shall be capable of being understood by itself, regardless of the order in which it is read. Messages shall be centered and uppercase within each line of the legend. If more than one portable changeable message sign is simultaneously legible to road users, then only one of the signs shall display a sequential message at any given time. As guidance, the display time for each phase shall be at least 2 seconds, and the sum of the display times for both of the phases shall be no more than 8 seconds. Sign operator will adjust the display rate so the 2 phase message can be understood by the motorist approaching the sign at the posted speed limit. Relocate the units for the various stages of construction as shown in the plans or as needed to inform the motorists.

Provide an experienced operator for the portable changeable message sign during periods of operation to ensure that the messages displayed on the sign panel are in accordance with the plans and in accordance with message content guidelines. Ensure that the message sign is illuminated properly to meet the existing light conditions, and that all adjustments for operation of the sign are made as needed to properly guide motorists.

Expedite repairs due to failure, malfunction or damage to a portable changeable message sign. Furnish another changeable message sign during the repair time. Repair or replace portable changeable message sign immediately; otherwise, suspend all construction activities requiring the use of the sign until the sign is restored to operation.

Perform all maintenance operations recommended by the manufacturer of the sign. Include the periodic cleaning of the sign face and associated solar panels in maintenance operations.

1120-4 MEASUREMENT AND PAYMENT

Portable Changeable Message Signs will be measured and paid as the maximum number of portable changeable message signs acceptably placed and in operation, at any one time during the life of the project. Payment for *Portable Changeable Message Signs* will be made on the following schedule:

- (A) 70% of the unit bid upon placing the unit in service,
- (B) 20% of the unit bid when the project is 50% complete, and
- (C) 10% of the unit bid when the project is 100% complete.

Portable Changeable Message Signs (Short Term) will be measured and paid as the actual number of days the portable changeable message sign (short term) is used on a project for a specific work operation, removed from the project after the specific operation is complete and remains in use on the project no longer than 30 days.

Replacement, repair and maintenance of changeable message signs will be incidental to the work of this section.

Payment will be made under:

Pay Item	Pay Unit
Portable Changeable Message Sign	Each
Portable Changeable Message Sign (Short Term)	Day

SECTION 1130 DRUMS

1130-1 DESCRIPTION

Furnish, install, maintain, relocate and remove drums with ballast.

1130-2 MATERIALS

Refer to Division 10.

Item	Section
Drums	1089-5

Provide drums that are on the NCDOT Approved Product List.

1130-3 CONSTRUCTION METHODS

Use the same type of reflective sheeting on all drums installed at any one time during the life of the project. Spacing of these devices is equal in feet to the speed limit in the taper and twice the speed limit in the tangent sections.

Use a ballasting method in accordance with manufacturer's specification. When using a tire ballasting method, use approved manufacturer's tires and place the tires flush with the ground.

Immediately replace any drum, ballast or reflective sheeting that are torn, crushed, discolored or otherwise damaged.

1130-4 MEASUREMENT AND PAYMENT

Drums will be measured and paid as the maximum number of drums acceptably placed and in use at any one time during the life of the project.

Relocation, replacement or repair of drums, ballasts or reflective sheeting will be incidental to the work of this section.